

which are so far from being in a corresponding style, or at all ornamental, that the more they had been shut out of view the better. At all events there was no necessity for the immediate opening towards the street being left so wide; that might have been contracted and rendered less of yawning vacuity, by the insertion of two columns or pillars of some sort, between which there would still have been ample space for an open thoroughfare. In like manner, the centre intercolumn of the order itself is offensively wide, and is filled in with a triple window on both floors, the effect of which is decidedly bad, nor is it hardly possible to place two windows of that kind in sequence one over the other, so as not to offend the eye; these windows are besides of very ignoble and jejune design—certainly not at all in conformity with the character of the order—which is also the case with all the rest of the detail. In fact, the architect would have done better to omit columns altogether, and bestow greater attention on features that cannot be so conveniently got rid of, but which, if not made beautiful, must be retained as blemishes.—*Morning Herald.*

RESTORATION OF TRENTHAM CHURCH, STAFFORDSHIRE.

TRENTHAM Church, like many of our most ancient churches, forms an appurtenance to the mansion connected with the domain on which it is situated. Trentham Hall has been the family seat of the Levesons, and through them of the Gowers, upwards of three centuries. The present duke, soon after succeeding to the estates and titles of his forefathers, determined to repair and improve the family mansion, and calling in the aid of Mr. Barry (the architect who has so much distinguished himself at the new Houses of Parliament), his grace has, at an immense expense, converted a very modest and ordinary-looking mansion into a splendid Italian palace, and surrounded it with terraces, walks, and gardens, ornamented with pavilions, fountains, and statues.

The improvements connected with the Hall being nearly completed, his grace, with that munificence which has always distinguished his family, resolved, that the parish church, which, like too many others, had been so much disfigured by the hands of ignorant conservators, as dilapidated by the lapse of time, should be thoroughly restored and repaired at his own cost. Mr. Barry being intrusted with the work, evinced that true taste which ever distinguishes genius. He did not attempt to invent any thing new, but merely to restore that which was worthy, discarding the excrescences which had from time to time crept in. The consequence is, that Trentham Church is now a complete chronicle of the various styles of church architecture which have prevailed in England for the last 800 years; indeed, it is upon record that a church has existed at Trentham more than 1200 years. In the nave we have the original Norman columns, with their quaint caps and lofty pointed arches, the porch being a specimen of the early English style, while the windows evidently belong to the later and more decorated or perpendicular style. And again, within the church, the oak screens, around the chapels and across the choir, belong to the later years of the Elizabethan compositions, immediately preceding the total downfall of all notions of fitness or propriety in architecture, when even the glorious examples of Sir Christopher Wren and Inigo Jones served only as landmarks to the sinking art.

To make even a tolerable design out of such incongruous mixtures must have been a task of no small difficulty. How well the architect has succeeded, let the many approving opinions which have been passed upon it testify; while the introduction of several judicious alterations has tended to the improvement of the whole, and has contributed to render the general effect pleasing and harmonious. Among these improvements may be mentioned the extension of the nave, both at the east and west ends, and the introduction of ornamental glazing, slightly combined with stained glass. We must not omit to notice that a beautiful window of stained glass has been placed in the north aisle, in memory of the late highly respected pastor of Trentham, the Rev. Thomas Butt, who was minister nearly 40 years. The

expense of this interesting memorial has been defrayed by his widow. It was executed by Mr. Willement, of London, the architect who has been similarly employed at the Temple Church. The floors of the aisles, choir, and communion, are paved with the new encaustic tiles, from Messrs. Minton's manufactory, at Stoke-upon-Trent, laid in various devices, and relieved with plain black borders, the whole having a very excellent effect. And to add to the comfort of the congregation, an excellent warming apparatus has been fitted up by Mr. Bostock, of Hanley. The fitting up of the church is not yet completed, but we understand that it will be done with old oak panelling, seats, &c., of very substantial and suitable design. The parishioners, in order to testify their gratitude and respect to the noble duke, have subscribed for the expense of a new font, and his grace has kindly accepted the offer. All the work has been executed by the duke's own workmen, under the direction of Mr. Jenkins, the clerk of the works, in a very superior manner, alike creditable to all connected with it, and appropriate to the sacred purposes to which the edifice is devoted.—*North Staffordshire Mercury.*

NEW MOTIVE POWER.

THE new motive power of Dr. Drake, now exhibiting at No. 414, Broadway, is indeed a curiosity, and cannot be viewed without forcing upon the mind the importance of scientific knowledge to the advancement of practical mechanics. The machine in motion does not appeal more directly to the senses than it forces upon the mind the conviction that the invisible mechanical agent called into existence, is the result of practical philosophical research and experiment, scientifically directed to the accomplishment of a particular end, and which never could have been attained by the simple exercise of any mechanical ingenuity, however great.

The engine in operation is not merely a philosophical toy, as may be imagined by those who have not seen it. It is of not less than three-horse power, and consists of an ordinary high pressure steam cylinder of six inches diameter, traversed by a piston having eight inches length of stroke, connected with a crank axle on which there is a heavy fly wheel. It is without furnace, boiler, or chimney, and has simply an atmospheric air, and a gas and exhaust pipe connected with the cylinder. The motion is created by the combustion, within the cylinder, of atmospheric air combined with a certain proportion of gas, which is ignited by a process known only to the inventor. By this combustion, which is instantaneous, the air within the cylinder is expanded with great power, and the piston is forced to recede, and motion is communicated in the machinery. After the machine is put in motion the successive ignitions are self-caused, and are produced, as far as the mechanical operation is concerned, by the same arrangement and with the same exactness as the steam is made to act in an ordinary steam-engine; the atmospheric air and gas being supplied by their appropriate pipes, and an exhaust pipe being connected with the cylinder in the usual way. By means of a small cock in the supply pipe, the operator with his thumb and finger controls the machine.

In the experiment now being made, gas is used simply because it is more conveniently obtained than any other combustible, but the inventor states that the engine will, with equal facility and certainty, burn camphine and other preparations, such as tallow, oil combined with whiskey, &c. Its ability to use these last products as fuel, makes this invention of immense importance to the Great West, as should the transportation on the Mississippi and its measureless tributaries be effected by this power, it will furnish a home market to the grower of these articles entirely new, and to an extent far greater than all others now in existence. Without pursuing this subject farther, we will state what appear to be the obvious advantages of this invention over the steam-engine. The first and most important is security—there is no danger from explosion nor from fire, either accidentally communicated, or from the spontaneous combustion of the fuel. 2nd. The weight of an engine of given power must be greatly less, as there is no furnace, no boiler

with its water, no chimney, and no condensing apparatus, and comparatively but a trifling amount of fuel either in weight or bulk. 3rd. The space occupied by the machine and its fuel is so much less as to give great additional room for freight and passengers. 4th. The ability of making long continuous voyages, as ships supplied with this invention can carry fuel enough to propel them to China, without its materially interfering with their available capacity for freight. 5th. Economy in working—as there is no expenditure of power except to produce motion, as is the case with the steam engine in irregular work, where the steam has to be generated and preserved at its proper temperature, while the engine may be temporarily stopped. This is of great consideration on the Western waters, where the trade demands frequent stoppages either to receive or deliver passengers or freight, or to wood, which last cause of detention will be altogether obviated, as well as the expense and annoyance of firemen.

We do not mean to say that the experiment has been sufficiently tested to make these things perfectly certain on a large scale, but that they are proved to be so on an engine of at least three-horse power; and that no well-grounded objection has been urged, and none appears to exist of sufficient force to create a reasonable doubt of the successful adaption of this invention to engines of the largest class. In a few days a committee of scientific and practical gentlemen will accurately ascertain the power of the present machine, and the quantity and cost of the fuel it consumes.—*New York Paper.*

PLANK ROADS.

A FRIEND from Liverpool favours us with the following from the American paper to which his attention was drawn by an article in THE BUILDER on Plank Roads in Canada:—

"A PLANK ROAD FROM BUFFALO TO THE FALLS.—Yesterday we ventured a few remarks in favour of constructing a MacAdam road from this city to the Falls. It has led to the suggestion that a plank road would probably be much cheaper, and far more agreeable to travel on. Of the truth of the latter statement there can be no doubt; and from the remarkable cheapness of plank—especially hemlock. If they will answer—must render the expense of such a road quite small compared with what it would be under other circumstances. Allowing the track to be twenty feet wide, as many miles in length, and the plank three inches in thickness, and to cost 4 dollars per 1000 feet, board measure, then this item of expense will be 25,344 dollars. Allowing seven stringers or sleepers running lengthwise with the road for the plank to rest on, to cost one cent a foot each, this item would amount to 7,392 dollars. It is a forest country much of the way, and the facility of floating timber and plank by the canal and river will render the cost of transport of material very light; while the general level of the surface will also reduce the cost of grading to a mere nominal sum. The whole road need not cost to exceed 40,000 dollars, and with a low toll could not fail of being productive stock.

"Plank roads are comparatively unknown among us; but those constructed in Canada West have been found to answer a good purpose. They enable a horse to draw great weight, and are admirably adapted to favour speed without injury either to horse flesh or carriages by incessant collisions against an iron pace. We throw out these suggestions, which will pass for what they are worth.

"It gives us pleasure to find that there is no difference of opinion in regard to the propriety of making a good public road of some kind; and those whose money is to pay for it will consult the public convenience as well as their own in constructing it in that way which, under all circumstances pertaining thereto, is most feasible."—*Buffalo Com. Adv.*

A PORTABLE LIGHTHOUSE.—An invention has recently been made for showing the position of a ship in danger, and thus directing the movements of persons attempting to give assistance from the shore. It consists of a composition, which, when ignited, gives a very distinct and brilliant light, and has been tried, it is said with success, at the Goldstone, where the Pegasus was wrecked.